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207 7590 08/11/2008

WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP
TEN POST OFFICE SQUARE
BOSTON, MA 02109

EXAMINER

PAK, JOHN D

ART UNIT

PAPER NUMBER

1616

DATE MAILED: 08/11/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/886,663

06/21/2001

Shantha Sarangapani

ICET-001XX

4750

TITLE OF INVENTION: COMPOSITIONS FOR MICROBIAL AND CHEMICAL PROTECTION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

NO

\$1440

\$0

\$0

\$1440

11/12/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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207 7590 08/11/2008

**WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP
TEN POST OFFICE SQUARE
BOSTON, MA 02109**

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/886,663 06/21/2001 Shantha Sarangapani ICET-001XX 4750

TITLE OF INVENTION: COMPOSITIONS FOR MICROBIAL AND CHEMICAL PROTECTION

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nonprovisional NO \$1440 \$0 \$0 \$1440 11/12/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
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PAK, JOHN D 1616 424-405000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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207	7590	08/11/2008	EXAMINER	
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP TEN POST OFFICE SQUARE BOSTON, MA 02109			PAK, JOHN D	
			ART UNIT	PAPER NUMBER
			1616	
DATE MAILED: 08/11/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

09/886,663

Examiner

John Pak

Applicant(s)

SARANGAPANI ET AL.

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's response of 4/16/2008.
2. ☒ The allowed claim(s) is/are 30-39 [renumbered as 1-10].
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/John Pak/
Primary Examiner, Art Unit 1616

This Office action is in response to applicant's response of 4/16/2008 and telephone conversations between applicant's attorney, Lin Hymel, and the undersigned Examiner conducted on 7/25/2008, 7/30/2008, 7/31/2008 and 8/1/2008, wherein the following Examiner's Amendment was negotiated and authorized.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Hymel on 8/1/2008.

Amendments to the Claims

CANCEL all currently pending claims, which are claims 5, 7, 9, 11, 13, 15, and 17-29.

ADD the following new claims 30-39.

30. (New) An antimicrobial, chemical protective and chemical agent deactivating material comprising:

a microporous polytetrafluoroethylene layer laminated to a continuous film of hydrophilic cross-linked polyvinylalcohol for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

a chemical deactivation component free of activated carbon deposited on said polytetrafluoroethylene that is laminated to said cross-linked polyvinylalcohol, said

chemical deactivation component being dispersed within a carrier material, said chemical deactivation component comprising an effective chemical deactivating amount of one or more chemically deactivating copper compounds, silver compounds, or elemental silver; and

a biocidal component free of activated carbon deposited on said polytetrafluoroethylene that is laminated to said cross-linked polyvinylalcohol, said biocidal component being dispersed within said carrier material, and said biocidal component comprising an effective biocidal amount of one or more biocidal copper compounds, silver compounds, or elemental silver;

wherein said chemical deactivation component contains a chemically deactivating silver compound or elemental silver, or said biocidal component contains a biocidal silver compound or elemental silver.

31. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein said chemical deactivation component comprises a substance selected from the group consisting of nanosized cuprous or cupric oxide; a copper or silver complex of an imidazole, or an aminocarboxylic acid; micron or nanosized elemental silver or silver oxide; and a nanosized silver-copper alloy.

32. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein said biocidal component comprises a substance selected

from the group consisting of silver phosphate, silver citrate, silver benzoate, silver salicylate, nanosized elemental silver, copper phosphate, copper acetate, copper salicylate, copper citrate, copper benzoate, nanosized silver-copper alloy, and nanosized cuprous or cupric oxide.

33. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein said chemical deactivation component further comprises a substance selected from the group consisting of nanosized zinc oxide, nanosized molybdenum oxide, nanosized vanadium oxide, nanosized iron oxide, nanosized manganese oxide, titanium dioxide, carbon nanotubes, a tertiary amine, polyelectrolyte, polyvinylsulfonate, polyallylamine, elemental platinum, and platinum oxide.

34. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein said biocidal component further comprises a substance selected from the group consisting of zinc phosphate, zinc acetate, zinc salicylate, zinc citrate, zinc benzoate, zinc-1-hydroxypyridine-2-thione, nanosized zinc oxide, and bismuth subsalicylate.

35. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein the polytetrafluoroethylene layer contains carbon nanotubes.

36. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein the cross-linked polyvinylalcohol film contains carbon nanotubes.

37. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, wherein the cross-linked polyvinylalcohol film contains glycerin or a plasticizer.

38. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 37, wherein the plasticizer is trimethylol propane trimethacrylate.

39. (New) The antimicrobial, chemical protective and chemical agent deactivating material of claim 30, further comprising a second microporous polytetrafluoroethylene layer laminated to said continuous film of hydrophilic cross-linked polyvinylalcohol.

Amendments to the Specification

Insert the following paragraph as the first paragraph below the Title of the invention **at page 1**, after line 1 - - - - -

This application claims the benefit of Provisional Application 60/213,062, filed on June 21, 2000.

- - - - - .

Insert the following five paragraphs to the Specification **at page 4**, following the section title "DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT" - - - - -

In one aspect, the invention provides an antimicrobial, chemical protective and chemical agent deactivating material having a microporous polytetrafluoroethylene layer laminated to a continuous film of hydrophilic cross-linked polyvinylalcohol, a chemical deactivation component, and a biocidal component. The microporous polytetrafluoroethylene layer laminated to a continuous film of hydrophilic cross-linked polyvinylalcohol provides a physical barrier to chemical vapors, while permitting moisture to pass through the layer. The chemical deactivation component is free of activated carbon and is deposited on the polytetrafluoroethylene layer that is laminated to the cross-linked polyvinylalcohol film. The chemical deactivation component is dispersed within a carrier material. The chemical deactivation component includes an effective chemical deactivating amount of one or more chemically deactivating copper compounds, silver compounds, or elemental silver. The biocidal component is free of activated carbon and is deposited on the polytetrafluoroethylene layer that is laminated

to the cross-linked polyvinylalcohol film. The biocidal component is dispersed within the carrier material. The biocidal component includes an effective biocidal amount of one or more biocidal copper compounds, silver compounds, or elemental silver. In the material, either the chemical deactivation component contains a chemically deactivating silver compound or elemental silver, or the biocidal component contains a biocidal silver compound or elemental silver.

In certain embodiments of the antimicrobial, chemical protective and chemical agent deactivating material, the chemical deactivation component includes a substance selected from the group consisting of nanosized cuprous or cupric oxide; a copper or silver complex of an imidazole, or an aminocarboxylic acid; micron or nanosized elemental silver or silver oxide; and a nanosized silver-copper alloy.

In certain embodiments of the antimicrobial, chemical protective and chemical agent deactivating material, the biocidal component includes a substance selected from the group consisting of silver phosphate, silver citrate, silver benzoate, silver salicylate, nanosized elemental silver, copper phosphate, copper acetate, copper salicylate, copper citrate, copper benzoate, nanosized silver-copper alloy, and nanosized cuprous or cupric oxide.

In still other embodiments of the antimicrobial, chemical protective and chemical agent deactivating material, the chemical deactivating component further includes, in addition to a copper compound, silver compound, or elemental silver, a substance selected from the group consisting of nanosized zinc oxide, nanosized molybdenum

oxide, nanosized vanadium oxide, nanosized iron oxide, nanosized manganese oxide, titanium dioxide, carbon nanotubes, a tertiary amine, polyelectrolyte, polyvinylsulfonate, polyallylamine, elemental platinum, and platinum oxide.

In yet other embodiments of the antimicrobial, chemical protective and chemical agent deactivating material, the biocidal component further includes, in addition to a copper compound, silver compound, or elemental silver, a substance selected from the group consisting of zinc phosphate, zinc acetate, zinc salicylate, zinc citrate, zinc benzoate, zinc-1-hydroxypyridine-2-thione, nanosized zinc oxide, and bismuth subsalicylate.

- - - - - .

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620**. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Johann Richter, can be reached on **(571)272-0646**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John Pak/
Primary Examiner, Art Unit 1616